(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 February 2004 (19.02.2004)

PCT

(10) International Publication Number
WO 2004/015276 A1

(51) International Patent Classification[7]: F04D 29/46, 29/44, 29/42, 29/52, 29/66, 29/54

(21) International Application Number: PCT/GB2002/003779

(22) International Filing Date: 13 August 2002 (13.08.2002)

(25) Filing Language: English

(26) Publication Language: English

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

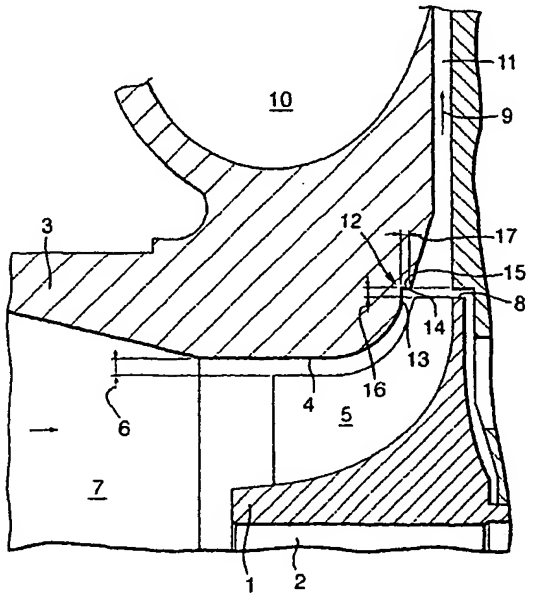
(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *with amended claims*

Date of publication of the amended claims: 25 March 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette..

(54) Title: COMPRESSOR



(57) Abstract: A compressor for a turbocharger comprising: a compressor wheel having compressor blades and being mounted for rotation on a shaft a shroud mounted adjacent the wheel and defining a gas flow path between the shroud and the blades from a compressor inlet to a diffuser outlet; wherein in cross-section the shroud has a surface in the flow path with a profile which includes a section with a smoothly curving surface with a smoothly curving surface and at least one relative discontinuity.

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AMENDED CLAIMS

[Received by the International Bureau on 15 December 2003 (15.12.03): original claims 1 - 15 replaced by amended claims 1-15 (2 pages)]

1. A compressor comprising:

a compressor wheel having compressor blades and being mounted for rotation on a shaft;

a shroud mounted adjacent the wheel and defining a gas glow path between the shroud and the blades from a compressor inlet to a diffuser outlet;

wherein in cross-section the shroud has a surface in the flow path with a profile which includes a section with a smoothly curving surface and at least one relative discontinuity, including a blocking face adapted to impede reverse flow of gas between the shroud and the wheel.

2. A compressor according to claim 1 wherein the discontinuity is located at a predetermined radius from the shaft which radius is larger than the radius of the wheel.

3. A compressor according to any one of the preceding claims wherein the radial distance between the discontinuity and the tip of the leading edge of the wheel is of the same approximate order as the radial clearance between the wheel and the housing at the wheel leading edge.

4. A compressor according to any one of the preceding claims comprising a second discontinuity provided in the curving surface in the region of the leading edge of the wheel.

5. A compressor according to claim 4 wherein the second discontinuity is located upstream of the leading edge of the wheel blades.

6. A compressor according to claim 5 wherein the second discontinuity is

spaced from the leading edge of the wheel blades by a distance of the same order as the axial clearance of the wheel tip from the compressor housing.

7. A compressor according to any one of the preceding claims wherein the or each discontinuity comprises an abrupt edge relative to the gradient of the curving surface.

8. A compressor according to claim 7 wherein the abrupt edge comprises a step in the curving surface.

9. A compressor according to any one of the preceding claims wherein the or each discontinuity comprises a planar surface cut into the curving surface.

10. A compressor according to claim 9 wherein the planar surface is parallel to the axis of the shaft.

11. A compressor according to claim 9 wherein the planar surface is perpendicular to the axis of the shaft.

12. A compressor according to any one of claims 4 to 11 wherein the radial extent of the second discontinuity is of the same order as the radial clearance between the wheel tip and the housing.

13. A compressor according to any one of claims 4 to 12 wherein the sizes of the first and second discontinuities are closely similar.

14. A compressor according to any one of claims 4 to 13 wherein the shapes of the first and second discontinuities are closely similar.

15. A turbocharger comprising a compressor according to any one of the preceding claims.